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ABSTRACT

Scripts of the presentations made during Forum 23--"Three Case Studies of Instructional Change"--of the annual meeting of the American Association of Community and Junior Colleges are provided. Representatives from the following schools described instructional changes made in their institutions: Burlington County College (an innovative college in a new physical plant, in its third year of operation), Piedmont Technical Institute (a school with 14 different locations, no permanent facilities, in which students can register any day for any course--has an attrition rate of less than 10%), and Hinds Junior College (56 years old, has a large campus, and in many ways resembles a four-year college more than a community college). The factors contributing to changes in these institutions are summarized. (KM)

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FORUM 23

THREE CASE STUDIES OF INSTRUCTIONAL CHANGE

JC 730 097

ANNUAL MEETING

AMERICAN ASSOCIATION OF COMMUNITY AND JUNIOR COLLEGES

ANAHEIM, CALIFORNIA

FEBRUARY 25-28, 1973

UNIVERSITY OF CALIF.
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CLEARINGHOUSE FOR
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INFORMATION

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PREFACE

The following pages contain the scripts of the presentations made during Forum 23 -"Three Case Studies of Instructional Change".

In the event anyone would care to contact one of the participants, the name and address of each are:

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A special word of appreciation is offered to Mrs. Donna Davis who did the typing and minor editing of the proceedings.

INTRODUCTORY REMARKS

Dr. James O. Hammons

Welcome to Forum 23 - "Three Case Studies of Instructional Change". For those of you who might be lost, this is Ballroom B.

I am Jim Hammons and I will be acting as chairman and moderator at the Forum. As speakers, we have with us today a president, a dean, and a substitute. In the interest of time, I will briefly introduce each now. Please hold your applause.

The first speaker is Dr. N. D. Evans, President of Burlington County College, Pemberton, New Jersey. Dr. Evans has been a teacher and administrator in the public schools of Pennsylvania, a teacher at Temple University, the University of New Hampshire, and the University of Delaware. Like many of us, he came into the community college field late. In his case, it was the result of his work in making several feasibility studies for new community colleges in Pennsylvania. Six years ago, he became the first President of Burlington County College. Unlike many college presidents, he continues to teach two or three courses a year. He is a rather prolific writer, having written or co-authored numerous journal articles and four books, the most recent of which is Planning and Developing Innovative Community Colleges, published by Prentice-Hall.

The second speaker was scheduled to be Mr. Craven Sumerell, President of Piedmont Technical Institute, Roxboro, North Carolina. However, if you will recall, I said that we had a president, a dean, and a substitute. Well, here today substituting for his president is Mr. Otto Blumenstein, the Educational Development Officer at Piedmont Technical Institute. It is particularly appropriate that Otto substitute for his president for two reasons. One, as Otto remarked to me yesterday, he wrote the presentation. Secondly, as Educational Development Officer, he is the person charged with the responsibility for pre-service and in-service training of faculty and for helping faculty improve their teaching. Consequently, he is largely responsible for many of the results which have been achieved at Piedmont Tech.

Otto's background is particularly unique. After 15 years as an aerospace engineer, Otto entered the field of education as a faculty member in the North Carolina system of two-year colleges. In the five years which have passed since then, he has functioned as a teacher, a Director of Occupational Education, and more recently, as an Educational Development Officer.

The third speaker will be Dr. Floyd Elkins, Dean of Instruction at Hinds Junior College, Raymond, Mississippi. Floyd is a 1955 graduate of the Kellogg Junior College Leadership Program at the University of Texas. He is the author of numerous articles about the two-year college, is widely sought as a consultant, and at present, is a member of the AACJC Board of Directors.

Each of these gentlemen represent institutions which have dared to be different. It shall be their purpose today to share with you some of their experiences.

Since each of these institutions has a strong commitment to the use of behavioral objectives, I thought it only appropriate if I were to at least attempt to state several goals for this Forum. As we talked about this in November, I asked that each develop a presentation which would accomplish the following objectives:

1. Briefly familiarize the audience with their college;

2. Describe some of the things they had done which represented change;

3. Explain some of the factors which contributed to their being able to do this;

4. Review some of the problems they encountered;

5. Using 20-20 hindsight, comment on a few of the things they would do differently if they were to do it again; and

6. Present any evidence they might have regarding the effects of these changes.

I've reviewed each of their presentations, and I think they have each done a remarkable job.

In keeping with the word "change" in the title of our Forum, we're doing a few things differently. For example, as you came in the door, you should have received an evaluation form with two attached order forms. The purpose of the evaluation form is to give us your impression of the Forum. The two forms attached to it also represent a change. One of them is an order blank for an edited version of their presentations. Each of the presenters has volunteered to give me a copy of their remarks, and in roughly a month I hope to have copies available which I'll be happy to send you. Consequently, there is no need for you to take notes. Put away the pencil and paper, relax, and enjoy it - or, as we tell our students -

it's all in the handout! The second order form is for a copy of a report which traces the development of the faculty pre-service program at Burlington County College. As the author of the document, I can be very objective and recommend it as a reference to any of you who are involved in developing a faculty orientation program.

At this point I would like to comment about each of the schools and try to give you some idea as to why they were selected to be on the program.

One college is a small, public technical institute in North Carolina. Although located in a rural county of 25,000 people, it has managed to generate an annual FTE of 1,300. Now in its third year of operation, it has no permanent facilities but operates from fourteen different locations in the county. To indicate why it was selected for this Forum, I'll mention just two facts:

1. At this school, students can register any day for any course;

2. The attrition rate is less than 10%.

The second institution, Burlington County College, is quite different. The college serves a business-industrial-farm community of 325,000. During its third year of operation, it moved into one of the most innovative physical plants in the country. Burlington represents a school which was planned to be different and has attempted to insure that its preconceived goals were achieved through such things as a carefully developed recruiting program, a vigorous pre-service program for new faculty, and extensive learning resource support to faculty. To illustrate that it has succeeded, at least to some degree, I'll make two comments. At the dedication ceremony last spring Dr. Jim Wattenbarger, speaking from his experience with hundreds of colleges in over 30 states, made the remark that he considered Burlington to be one of the 10 most innovative two-year colleges in the nation. The other comment I'll make has to do with the attrition rate at Burlington. This winter semester, all but 7.6% of the entering freshmen were still enrolled.

The tie which binds Burlington and Piedmont Technical Institute together is that both institutions are relatively new institutions, were planned to be different, and both are relatively small.

This was not the case of the third institution, Hinds Junior College. It is a 56 year old public community college presently enrolling 5,000 students. In many respects, it

resembles a four-year college more than a community college. It has a multitude of buildings, a campus of 500 acres, and seven dormitories. It was chosen as an example of a large, well-established school, which after 50 years decided to change.

At this time I would like to introduce you to our first speaker, N. D. Evans, President of Burlington County College.

BURLINGTON COUNTY COLLEGE

(First Speaker: Dr. N. D. Evans, President of Burlington County College. The first part of Dr. Evans' presentation was a multi-screen slide-tape presentation entitled, "Introduction to Burlington County College". The script for this follows.)

Burlington County College is an unusual institution of higher education. It is particularly concerned with the learning needs of its students.

First it is an open door institution extending to any student, 18 or over, a variety of instructional programs designed to meet the diverse needs of all members of the community. There are two basic types of instructional programs at the college, namely college parallel programs leading to transfer to a four year institution and career programs leading directly to employment. Thus a college parallel program allows a student to complete his freshman and sophomore years here, receive an Associate of Arts degree and then transfer his credits to a four year college or university to complete the requirements for his baccalaureate degree. On the other hand a career program prepares a student to enter a particular field, such as medical technology, immediately after completing the appropriate two year program. Recognizing the various levels of skills which our students bring with them, the college provides a complete sequence of developmental courses. These courses are specifically designed to develop efficient skills in mathematics, English composition and reading in order to enable the student to successfully deal with regular college work. Finally, the college offers complete day and evening programs in order to extend the opportunity for higher education to a maximum number of Burlington County residents.

However, our concern for the learning needs of our students involves more than simply providing maximum access to a wide variety of programs. Our major contribution and most unique effort is that we are providing for a selection of ways or modes - some quite new - in which a student can learn. Instead of depending on a single mode of instruction - the classroom lecture method - we have facilities which allow the convenient use of other modes such as independent study, seminar, or open laboratory. These modes can be used singly or in combination as is appropriate for the material in a particular course. The student finds that learning is easier not only because the course material can be presented in the most

appropriate mode, but also because he often has the opportunity to discover the mode through which he learns best.

Basic to the efficient use of this multi-model approach is the rather universally accepted definition of learning. We presume that learning has occurred if we can observe a change in the learner's behavior. If the desired changes in behavior are defined in advance, more systematic and economical means of achieving them become apparent. In short, a clear definition of goals makes it easier to select the most appropriate means of achieving them.

However, in education this systems approach does not always lead to the selection of a single most efficient means of reaching a particular learning goal. This is because all individuals do not learn best from the same mode. Therefore, the systems approach ideally provides a variety of learning modes which allow the maximum number of students - hopefully all - to learn in the manner they learn best. The theoretical benefits of a systems approach to instruction have been known to educators for some time. Realizing these benefits have often been frustrated by lack of the proper physical environment and technical support, at Burlington County College our most primary contribution is that we have designed the necessary facilities and provided the personnel and equipment for a truly multi-model approach to instruction. A closer look at various modes of instruction as they are being implemented here at Burlington County College will clarify how we are contributing to the development of the systems approach.

Independent study programs, mostly tapes and slide/tape presentations, are available in 175 carrels located in three independent study areas. Typically the content of an independent study program will be a carefully illustrated slide tape presentation of the hard informational material that would be traditionally presented in a lecture. The two main advantages of the independent study mode are that the student can study the material at his own pace and can go over the material as many times as he needs to master it. The potential effectiveness of independent study programs is increased when used in conjunction with the systems approach. Prestated behavioral objectives help focus the intent of each program and result in better organized and streamlined programs. In addition, systematic follow up through the use of post tests and other feedback devices provide a sound basis for effective revision.

For the large group mode of instruction there are two specially designed presentation rooms each having a capacity for 156 students. Here an instructor may meet his complete class simultaneously and present films, live demonstrations, television, multimedia programs or other learning experiences

which are most efficiently presented to large numbers of people. Presentation is made more convenient in the large group rooms by the media control systems which allow the instructor to control projectors, audio equipment, and room lighting from his lectern.

When the lecture format is used in large groups the inherent difficulty of determining the extent to which the class is grasping the material can be overcome by the use of the student response system. This mechanism allows the instructor to ask his class a multiple choice question and obtain a readout of the percentage of responses to each choice in a few moments.

Because the instructor can see the percentage of correct and incorrect responses he can judge whether to proceed with his presentation or to represent the material just covered.

The Student Response System is also designed to operate in conjunction with the computer facility at the college. Using the SRS system and the computer together, the instructor can determine precisely which students require assistance by means of tabulation of all individual responses to questions. This detailed information allows the instructor to follow the progress of each student and identify individual as well as general learning problems. The precision and speed with which this information is supplied by the Student Response System and computer allow the instructor to provide the student with an alternate learning experience to help him master the material in question.

While we feel that we can take advantage of the inherent efficiency of the large group mode by making it more responsive to the individual student we recognize that certain types of learning problems are best solved in small group or seminar settings. These modes offer opportunities for the instructor to reinforce particular information which may have been presented in either or both the large group or independent study modes. Most important these modes provide an environment for informal interchange and discussion.

Another mode of special usefulness is the open laboratory. This mode allows the student to learn manipulative skills in such courses as: mathematics, secretarial science, art, science, reading, and English. While the traditional lab usually requires that students perform a particular procedure simultaneously, the open lab allows the student to work in the lab at his own convenience, and more important, to spend as little or as much time as he needs to complete the assigned exercises.

All courses cannot and should not be designed so as to utilize all instructional modes. Nor should all instructors employ the same instructional strategies. In most instances a concern for all learners will require a sort of balancing of instructional modes and strategies in order that instruction be truly individualized.

If the college is learner-oriented, there need not be undue concern for dehumanizing instruction, but rather recognition of a means which is available whereby various instructional modes can be applied to assist students in achieving their instructor's predetermined objectives.

The application of technology to the process of instruction will have been justified only if the instructor can be released to interact with his students; to encourage; to motivate, guide and thereby enable the individual student to learn more efficiently. The experimental process which has been initiated here at Burlington County College represents a particular challenge to each participating staff member. The task of transforming educational theory into a successful practice is by no means effortless. Yet those of us who are dedicated to the institution's philosophy and goals are following that commitment closely. After all, the assistance to our students and subsequent personal gratification will be directly dependent upon our efforts.

(Following this presentation, Dr. Evans made a few remarks about some of the factors which contribute to instructional change.)

And now I would like to discuss specifically some of the factors that contribute to instructional change.

First, there must be a commitment to a systematic approach to instruction. At Burlington all faculty, as they were hired, agreed to this philosophy. Evidence of this commitment must come from the top; the president and the dean of instruction must be committed to the best in teaching-learning experiences for students. Their enthusiasm will permeate the staff. Then it is important to provide pre-service and in-service programs for faculty. At Burlington, from the first year, we have provided a pre-service summer program for all new faculty, bringing in expert consultants in the appropriate fields and having the dean and division chairmen work with the staff. Continuing in-service programs are likewise important after the staff is on board.

It is imperative to provide needed support staff and facilities; for example, a comprehensive learning resources center must be established, including adequate book and non-book media, as well as production facilities for all types of instructional resources. An educational development officer to assist faculty in curriculum development should be employed as soon as possible. It is likewise necessary to provide money and time for curriculum development. At Burlington we have consistently budgeted substantial sums of money for faculty fellowships in the summer for this purpose. When initiating an instructional systems approach it is well to prepare a position paper that will outline the philosophy and set the tone for instructional development. The paper we wrote at Burlington identifies a flexible format for course design and development, including the writing of learning objectives and a format for the course syllabus and learning packets, which are segments of each course.

Briefly, what are the results of deliberate, systematic instructional development at Burlington? First of all, most of our graduates have achieved considerable success in their transfer institutions and in the job market from the studies that have been made in New Jersey. Secondly, we have experienced constant improvement in our attrition rate -- it was 7.6% between the fall and winter terms of 1972-73. Third, we have enjoyed wide community support in our efforts to develop the best possible teaching-learning environment. Fourth, our record of salvaging marginal students in our open door college is fairly commendable. We are constantly striving to improve our developmental sequences to enable more students to succeed in the skill areas. We have a long way to go but we are pleased with our progress to date. Fifth, we have enjoyed consistently high student evaluation of the learning experiences at the college. Students participate regularly in evaluation of individual courses and the educational program in general. Finally, our results in instructional systems development have been achieved at a reasonable cost, which we define as on or below the median of current operating expenses of all New Jersey community colleges; and our campus construction and equipment costs were $4200 per full-time student at the time of bid in 1969, compared to a $6200 state average cost per student. Instructional systems development, with adequate plant and media support, is not cheap. On the other hand, it need not be more expensive than other more traditional methods. For us at Burlington the results to date more than justify the modest cost, in our judgment.

Now as to a few suggestions for those of you who might be contemplating a systematic approach to instructional development or change, I would share the following from our experience.

This comes under the heading of what we would do differently at Burlington. While we were able to employ the basic administrative staff at least a year before opening, it would be desirable to have the educational development officer on board well before initiating a systematic program. We did not employ our E.D.O. until about the time the faculty came aboard. In the area of learning resources support, we badly underestimated the faculty's ability to utilize a variety of media during the first year. It is imperative to spend enough money in this area and to provide enough personnel to give the critical support that is needed. The best way to turn off eager faculty members is to fail to support their efforts when it is needed.

If the faculty is expected to develop an approach relying heavily on instructional objectives, it is likewise important for the entire administrative team to employ some sort of management by objectives approach. While we have initiated this at Burlington we should have done it much earlier. It is also important to conduct pre-service and in-service programs for those at the mid-management or divisional chairman level so that they may keep up with the latest research and practice in instructional systems, and are therefore in a position to give timely leadership to their faculty. In conclusion, I heartily recommend a systematic approach to instruction for any new community college or existing college that is interested in moving ahead with creative instructional change.

PIEDMONT TECHNICAL INSTITUTE

(Second Speaker: Mr. Otto Blumenstein, Educational Development Officer at Piedmont Technical Institute. Mr. Blumenstein's presentation was entitled, "The Systems Approach at Piedmont Technical Institute.)"

At Piedmont Technical Institute in Roxboro, North Carolina, we adopted the Systems Approach to Individualized Instruction from the first day. Our students can enter a program of their choice; start at their level of knowledge on any school day of the year; progress at their own rate of learning to the level they wish to achieve - without fear of failure. All of our faculty are dedicated to this new method, or they would not be with us. After two years of operation we have managed to prove that this system works. Learning is accomplished by students who have a history of failure under traditional methods. We have not solved all the problems connected with this new technique, but we can say it is working. This alone is worth the extra effort that it takes. We have no regrets. It hasn't been easy, but it HAS been worth the extra effort.

Piedmont Technical Institute is located in the north central Piedmont area of North Carolina. Person County is a rural county with a population of 25,000. There is only one town of 6 to 8 thousand people in the whole county. Theoretically this population base was not capable of supporting a technical institution. There was a need to be filled here. The average educational level in this county is 7.3 years of schooling. The average per family income is $3,350. We were the 54th Technical Institute or Community College to be chartered in North Carolina. Now there are 56.

Six quarters after we started we had an average FTE rate of 1,356 with the lowest dropout rate (5%) in North Carolina, and probably in most of the country. We don't foster the idea that we have the panacea for educational ills. There has not been enough time to document our progress through research. We know that it is working. The Systems Approach is just another tool, used in addition to what we know, not used in lieu of everything else.

We think the Systems Approach to Individualized Instruction is the way to go. We would caution you, however, that it is expensive and difficult to administer and implement. We can say that the greatest advantage is Revision Data. Feedback from the students is a much more powerful tool than we had anticipated. We now apply Revision Data strategy to all levels of our institution, from administrative policies to teaching methods. Flexibility is important.

The key is total commitment. Everyone, from the President to the faculty members, must be committed to the Systems Approach to Individualized Instruction. Without this total commitment, it would not work.

Individual learning is the heart of the systems approach. From this individual learning six very dominant factors emerge:

1. Time is no longer a factor that causes many students to fail.

2. The fear of failing has been eliminated.

3. Students no longer are compared with other students for grades.

4. Students can enroll at any time of the year.

5. Students are not forced to stay in "lock step" with other students.

6. The advantages of multi media can be employed to their fullest.

I want to show you a sound slide presentation which is part of our Pre-Service Training program. When a new instructor comes to work at Piedmont Technical Institute, the first thing we do is put him through a series of training workshops to help him develop the necessary skills to individualize his course material. This slide presentation is the first part of the first workshop, and consists of the RATIONALE statement which tells him why he is required to individualize his courses.

In viewing this presentation, bear in mind that it was generated by the Educational Development Officer, whose job it is to train the instructors in the Systems Approach. The media portion of the presentation was actually done by students who are being trained, as interns, to assist instructors in putting media into their course work.

See if you can identify the methods used to exploit the six factors which I said have emerged as the significant aspects of individual learning.

(The following is the script of the first slide-tape presentation shown by Otto Blumenstein to illustrate pre-service training program for new faculty.)

Rationale

I want to welcome you to the workshop. The fact that you are here tells me that you as an educator are interested in students. I cannot say that all educators are primarily interested in students. I wish I could, but you as a select group must be interested in a better way of teaching or you wouldn't be here.

Before we launch into some of the better ways of teaching, let's examine what has been going on in the past and see if we can draw some conclusions which will lead to better ways.

What Is Wrong With the Old Way?

If we say we are interested in students, is it also safe to say we are interested in all students? I think it should be so, don't you? Benjamin S. Bloom, in his article, "Learning For Mastery", states the following:

> "Each teacher begins a new term (or course) with the expectation that about a third of his students will adequately learn what he has to teach. He expects about a third of his students to fail or just 'get by'. Finally he expects another third to learn a good deal of what he has to teach, but not enough to be regarded as 'good students'."

What he is really saying is that the average educator of the past has been satisfied to present material to the students as a group. As long as the average student learns the material presented, he will not really concern himself with the portion who are unable to grasp or master the material within the time framework allowed.

The tool used to weed out the "below average" student is usually a bell-shaped curve. I think we are all familiar with this device. I ask you, is it fair to write off the student who "fails" without first examining the reasons for the failure? Is it fair to say "he cannot" when with a little more time or attention, "he can"?

Does the bell-shaped curve tell us what a student can do with reference to the instructional material, or does it in truth tell how the student performed in comparison to his peers?

How would you like to be an average or good student thrown in a class of "geniuses", and then have your grade determined by comparing you with others in the class?

John A. Carroll says, "aptitude is the amount of time required by the learner to attain mastery of a learning task". Both Carroll and Bloom claim that 95% of students can achieve mastery of a subject if given enough time.

I think time is an important factor in the learning process. It is not, however, the only factor. Method of presentation can be equally important.

Some students learn very well by listening to lectures; others can read a topic and assimilate all the knowledge; but many (and probably most) students need visual and/or "hands-on" experience to grasp and absorb learning.

Who is to say that the good reader or the good listener is a better student than the one who must touch, see, or do. Since the test of learning should be the learner's ability to perform, should the student be judged by how he learned, or even by how long it took him?

If a doctor is going to remove my appendix, I am primarily concerned with his success in performing the operation, not by how long it took him or what method he used to learn. In other words, we are interested that the student master all the objectives, not just 70 or 80 percent.

In addition to the time factor and the "method of learning" factor, there are other areas which could stand some improvement over the way we have been doing in the past.

- We have failed to allow for the fact that all students do not enter a course with the same level of knowledge. This has often caused us to assume an "average" level of entry which resulted in some students being lost from the start, while others were bored stiff by material they already knew.

- We have failed to allow for absences when students missed an important lecture or demonstration causing the student to have to copy someone else's notes.

- We have condemned students for falling asleep in class when we are the ones who put them to sleep.

- We have taken points off grades because students missed deadlines when their delay had nothing whatsoever to do with their understanding of the material.

There are many other shortcomings in the traditional methods of teaching that we could criticize, but I say again that you would not be here if you were not already aware of these. Rather than waste any more time on the negative, we will go on to the positive aspect -- a better way.

What is the Better Way?

The better way would be the way that eliminates as many of the shortcomings as possible. Let's examine them one at a time:

If we recognize that some students take longer than others to achieve mastery of a subject, we can allow him (within reason) enough time to reach the level we have specified.

If we recognize that a student may not be able to read or listen and grasp the material, we can provide instructional methods that he can grasp. This presumes, of course, that listening and reading are not part of the objectives of the course material.

If we find out first where the student stands at the beginning of a course or unit of instruction, we can start him from that point and move forward with material new to him.

If we provide a way that the student can make up a lecture or demonstration that he missed for reasons beyond his control, we are not grading his inability to learn a subject because of physical conditions or personal problems.

If we make the student an independent member of the class, free to move ahead at the pace best suited to him, he will have to assume most of the responsibility for his own learning. This will promote a feeling of self-confidence and self-esteem he may never have had before.

If we grade a student in terms of what he can do, not in terms of what others have done, we are verifying that he is able to perform the job he was trained for, not how he was ranked in his class.

Summary

In summary then, we have said that it is time we:

- Stop assuming that all students will learn at the same rate.
- Stop assuming that all students can read or listen at the same level.
- Realize that students come at different levels of prior knowledge or ability.
- Not penalize students for personal problems or illnesses which have no bearing on their ability to learn.

- Stop forcing students to stay together in "lock step" and let them set a pace most comfortable to them.

- Grade students according to what they can perform instead of how they stand with respect to their peers.

How we intend to achieve this will be presented as the next topic.

* * *

Following this presentation which attempts to present a rationale for change, new faculty work through a number of learning experiences. At this time, I would like to show you one of these which we entitle, "The Systems Approach to Individualized Instruction".

Script

Much has been said about the systems approach to instruction. Very few people can really define the term. Let's examine the definition of the systems approach given by the National Laboratory for Higher Education.

> " -- It encompasses not only teaching facts and principles but the development of attitudes and personality, and permits a virtually unlimited variety of teaching and learning situations.
>
> "Essentially, the systems approach is a process consisting of six steps:
>
> 1. The instructor derives a rationale for the course, analyzing what the students are to learn and why. In other words, the instructor defines (and defends) the learning goals he sets for his students.
>
> 2. Learning goals are broken down into sequences of learning tasks, and each task is stated as an objective with precise performance indicators against which student progress can be measured.
>
> 3. The instructor develops a variety of self-instructional learning activities to match the requirements of each learning task and the different learning styles of diverse students.
>
> 4. The instructor pre-tests his students to determine their individual needs and to identify at what point each of them should begin work in the sequence of tasks leading toward the course goals.

5. The instructor post tests his students to determine their mastery of each task in the sequence.

6. The instructional program is continuously evaluated and revised as necessary to increase student mastery of the tasks and, ultimately, the course."

In order to implement the Systems Approach to Individualized Instruction, we must also take into consideration the following factors:

- The student works at his own rate. There are no severe time limits imposed on his learning processes.

- He may enter a course at any time.

- Media is the key to instructional means.

- Alternate methods and strategies are used. The student is presented with difficult material in different forms until he understands it fully.

- The outcome of instruction is defined in behavioral terms. The student knows, before he starts, where he is going, what route he will take, and what will be expected of him when he has finished his travels.

- When he arrives he will be measured in terms of what he can do, not how well he rates with respect to the rest of the students in the class.

- Since he will not be finished until he has mastered all of the objectives, he will not be given a grade. He merely passes on to the next learning tasks.

The key to this approach to education is the self-instructional unit, often referred to as the "package".

The package is a road map to lead the students through the learning experiences.

It is not a substitute for a textbook.

It merely tells the student what to do during the learning experiences. It may contain some instructional material, but in no case should the student spend his whole time "reading packages".

In this workshop you will develop a simple self-instructional unit (or package) and then test this package on your colleagues.

* * *

I am sure that this presentation leaves many questions unanswered in many of your minds. We don't have all the answers either, but are learning more about it every day.

The National Laboratory for Higher Education in Durham, North Carolina, is the best source we have found to be available for assistance in implementing this philosophy. They assisted in the development, monitoring, and evaluation of the Systems Approach at Piedmont Technical Institute. If this presentation appeals to you, we strongly recommend that you contact:

National Laboratory for Higher Education
Mutual Plaza
Durham, North Carolina 27701

or:

Piedmont Technical Institute
Box 1175
Roxboro, North Carolina 27573

for further information. We are available to assist you in any way possible.

There are copies available of the brochure that describes the systems approach at Piedmont Technical Institute. Please help yourselves.

HINDS JUNIOR COLLEGE

(Third Speaker: Dr. Floyd Elkins, Dean of Instruction at Hinds Junior College. Dr. Elkins gave a slide-tape presentation entitled, "Implementation of a Systems Approach to Instruction at an Established Institution". The script for his presentation follows.)

Hinds Junior College is an established community college with an open door admission policy, located in Hinds County, Mississippi, nine miles out of Jackson and 32 miles from Vicksburg. It serves three other adjacent counties and receives both local and state financial support. The college is 56 years old and evolved, as did other Mississippi junior colleges, from a land grant agricultural high school, this one being established in 1917. The college offers curricula in college-transfer, technical, vocational, and continuing education programs. The college now has an enrollment of approximately 3600 full-time students and 1400 part-time students -- mostly in evening school. Of the 3600 full-time day students about 2500 are academic. The faculty in the academic division numbers 145. It has 26 buildings on 490 acres which include an administration building, three academic buildings, a science building, a fine arts building, a vocational-technical complex, an agriculture complex, a student union building, a men's gymnasium, a women's gymnasium, seven dormitories, and a learning resource center including a media laboratory with various kinds of audio and visual capabilities - video production, closed circuit TV, audio access carrells, video access carrells, slide tape and film strip access carrells, a graphics art department, and a room for multi-media presentations.

In 1968 the academic dean began studying the systems approach to instruction with the possibility of implementing it on this campus. We believed a systems approach was simply the logical step by step process by which we can take the guesswork out of teacher and student achievement to insure effective learning. The opportunity arose in the summer of 1968 to send a core of ten faculty members to a four-week instructional systems workshop in Colorado in affiliation with GT-70. The key consultants at that workshop were Bruce Monroe and Larry Harty from INSGROUP, Inc. located here at Orange. At that time the dean believed that these ten faculty members returned with enough indoctrination to provide impetus for a full-scale implementation on the Hinds campus. The dean felt it necessary to attend a one-week seminar at San Francisco

also held by INSGROUP so he would be concurrent with the faculty in vocabulary, taxonomy, and format. In other words, I felt that they knew more about it than I did at this time.

At this point the dean began an intensive study of the procedures of implementation of the systems approach to instruction used on a few other campuses that had tried it at that time (1968).

Some observations were made from this study and consequently some decisions resulted from these observations.

Observations such as:

1. The "authorities" at that time had not attempted to systemize instruction on a campus-wide basis in all disciplines. This poses another set of problems.

2. The models of systems available were too sophisticated for faculty. They were developed by educational psychologists or educational technology specialists using flow charts, jargon, and taxonomies, that would probably never be assimilated by the English scholar, the mathematician, the chemist, the historian, the physicist, and artist and so on.

3. Some administrators had chosen to let volunteers work with systems and had consequently split the faculty into the dean's "fair-haired" proteges vs. the "old-line" faculty.

4. Some of the colleges studies had attempted to implement the instructional system too rapidly. For instance, after a two-week workshop the leadership assumed the college was "doing it".

The resulting decisions from these observations were:

1. To design a more simplified format for a systems approach to instruction that would be understandable and usable by all faculty - the English scholar or the chemist or the artist;

2. To develop a taxonomy and vocabulary understandable and usable by all faculty;

3. To develop a realistic time schedule for implementation;

4. To ask the entire faculty to write up their courses using a standardized format since the regional

accrediting association would be requiring detailed syllabi for the next reaffirmation visit. To paraphrase the requirements of our accrediting association: The standard calls for "a detailed course description showing the process of instruction being organized so that the students have a clear idea of the aims, the requirements, and the method of evaluation for each course taught on the campus with evidence that the library, laboratories, and the media center are used effectively in the instructional process". This is right out of the standards handbook.

There appeared to be two extremes evident on college campuses in regard to meeting these requirements. The old traditional approach is to have a departmental syllabus (which usually no one goes by) for each course taught on file in the department chairman's office and the dean's office gathering dust. The modern pressure from faculty is to let everyone "do his own thing" which frequently leads to chaos. The middle approach to this problem (which worked effectively at Hinds) is to set parameters but give the faculty full freedom to operate within these parameters. To me this is an extremely important concept to consider in the implementation of a systems approach.

Now, to make a brief explanation of the resulting instructional format used at Hinds, here is a diagram of the simple blank form we use. Notice the course objective and unit objective are general objectives. The learning objectives are specific and written in terms of what the student is expected to learn. These are listed in the left hand column. Each objective should be accompanied by several learning experiences - listed in the right hand column. The student reads, listens, views, and can be motivated to experience all this from a variety of sources. The form also calls for a statement of conditions for evaluation and the evaluative criteria to measure student achievement of objectives are listed on a separate page and numbered to coincide with the objective each measures. We ask for a pool of five items for each concept to be learned. Here is a sample of our form completed. This is a set of physics objectives - you can't read this, but - evaluative criteria to accompany these objectives listed on a separate page look like this and they are numbered to coincide with the objectives.

I want to give you a brief description of a method of teaching faculty that has developed through the process of a series of refinements made during the past three years. This method has been highly successful for us and is based on the idea of starting faculty, just as we ask them to start students, where they are. The taxonomy for difficulty of learning is

actually Bloom's three lowest levels. The lowest has been changed from knowledge to rote, the next is understanding, and the highest level we use is application. To start a group of faculty where they are, start teachers of the disciplines which are performance or application oriented on writing a list of expected performances - disciplines like composition, art, math, technical, etc. Humanities and social sciences are concept oriented disciplines so we start these faculty on concepts.

For instance, they are asked to write a course objective and list the unit titles for the course. Then they start with unit one and list the titles of the concepts to be taught in that unit. Next, the unit title is converted to a general objective and the concepts are converted to specific understanding objectives. Then the faculty member asks himself, "What facts are needed for a thorough understanding?" and these are converted to rote objectives. Then the faculty member asks himself, "How should the student apply the concept?" and coverts this into an application or performance objective. These objectives are coded with no astericks by rote objectives, one asterick by understanding objectives, and two by application objectives. This may seen trivial but it expedites proper sequencing. On our campus this group of objectives is termed a conceptual module and the faculty member proceeds to the next concept and so on until the unit is completed.

For performance oriented disciplines, a similar approach is used except we start this type of faculty thinking about what they want the students to be able to do (performance). These are application objectives. In this instance the understanding of the concept is frequently merely an explanation of "how to do it". Then the faculty member considers what facts are needed for an effective explanation. Now you have a module just like the one shown a moment ago. In writing this module of objectives the faculty member starts at the bottom and goes up.

Now, lets take a look at learning experiences. A variety of learning experiences should be the instructor's goal for each objective and we do not rule out the lecture or book assignment. These are acceptable learning experiences but there are others-seminar sessions, conferences, programmed material, guest lectures, laboratory experiences, demonstrations, and all the audio-visual media -- overhead transparencies, audio tapes, slides, slide/tape presentations, 8 mm film loops, 16 mm films, and video tapes.

The next phase had the faculty developing a pool of five test items for each objective. These could be questions, problems, or performance activities, whichever appropriate.

The final step our faculty goes through is the development of a slide/cassette tape production or a cassette tape/work-sheet production. Let's look at the slide/cassette tape concept. The faculty member writes what he considers a good explanation for each understanding objective as a unit and with this explanation written, he then has a rough draft of a script for the unit. He makes masters for slides off rote objectives. He then makes slides from masters and slides from anything else which would serve as an appropriate visual for the narrative. When the slides are developed and on hand the script is then refined and recorded. The script is then marked with slide numbers where each should appear and you have a usable piece of software for an effective student learning experience in the media center. Our media center director requires the faculty members to develop a slide list in order to replace lost slides - they do occasionally disappear.

So, to recapitulate the faculty tells the students exactly what they want them to learn, gives them every opportunity to learn it, and tests them on the learning expectations.

The time schedule for this project was as follows:

- First year - we wrote objectives
- Second year - we developed learning experiences to accompany each objective
- Third year - we developed evaluative criteria to determine student achievement of objectives
- Fourth year (half year) - we refined the system

My philosophy is that the details are extremely important. The basics are relatively easier to get implemented than the details that are necessary to give your total program the level of quality you desire.

Some procedures for implementation involving frequently overlooked ideas that have proved successful in the program at Hinds are as follows:

1. Get an outside team of specialists (we used INS-GROUP again) to introduce the program but inform this team in advance of all your prior activities including your decisions on format and vocabulary. Have them speaking your language.
2. Start the faculty where they are. Don't force them to abandon everything they've felt good about for years and move over to a strange camp.

3. Avoid unnecessary jargon.

4. Keep the process as simple as possible.

5. Do not overwhelm faculty with too much at any one time - especially at the beginning.

6. Use successive approximation. Start, evaluate, refine, re-evaluate, refine, re-evaluate, refine, etc. This evolutionary process will eventually produce a well written set of objectives with a reliable, valid set of evaluation instruments and even locally produced software to appropriately accompany each concept.

7. Use slow but steady progression.

8. Provide concerned and competent leadership.

9. Use faculty members with special expertise whenever possible to serve as leaders in in-service programs - faculty frequently resist administrators.

10. Develop a system for contingency.

    (a) usually release time; or

    (b) compensatory pay; or

    (c) both

11. Conduct workshops by discipline. Nothing turns off a humanities teacher more than having to sit through a set of math-science examples.

This fall semester was the first semester we felt adequately prepared to offer courses on a self-paced (independent) study basis which we believe will implement more effective learning. We wanted the course offered to be extremely well written with adequate software for all concepts. We were able to offer nine sections of English Composition, four sections of Math, and two sections of sociology on an independent study basis this past September. This number should increase next fall. It was also necessary to employ an Instructional Development Officer this past September since the dean had been substituting in this capacity and the number of faculty wanting assistance became overwhelming.

Here is some data collected from a faculty opinionaire, student evaluations of faculty, and grade distributions. This data shows three things: student performance, student attitude, and faculty attitude. In regard to student performance,

notice A's and B's in Mathematics have gone from 39% in 1968 to 49% this year while the D's and F's have dropped from 33% to 26% over the same period. The A's and B's in English have gone from 26% in 1968 to 49% this year. The D's and F's have dropped from 29% to 13% over the same period. For an example of student attitude, during the past five semesters completely anonymous student evaluation of all faculty on a five point scale has advanced from 4.1 to 4.2 to 4.3 and remained 4.3 for one more semester and then advanced to 4.4 this semester on the question, "Overall, how would you rate this faculty member". Here are some percentages from an anonymous opinionaire issued to the entire academic faculty at Hinds regarding the acceptance of a systems approach to instruction. (These four questions really get to the heart of what we expect a systems approach to accomplish.) Notice we use the term "HJC instructional format" instead of the term, "systems approach to instruction".

- "In your opinion has the proposed HJC instructional format caused effective communication from the faculty to the students?" 76% answered Yes and 24% answered No.

- "In your opinion has the HJC instructional format motivated you in providing a variety of learning experiences for your students?" 69% answered Yes and 31% answered No.

- "In your opinion has the HJC instructional format provided a means by which you can continually up-grade your instructional system objectively?" 70% answered Yes and 30% answered No.

- "In your opinion has writing up your courses in the HJC instructional format increased the effectiveness of your teaching?" 63% answered Yes and 37% answered No.

You can see we haven't turned the campus upside down, but some changes have occurred as far as learning and instruction are concerned and we are well pleased with these changes.

SUMMARY REMARKS

Dr. James O. Hammons

At this time I would like to try and summarize the factors which I believe contributed to the changes which these three institutions achieved. The elements which were common to all three institutions are as follows:

1. Strong leadership which was not afraid to assume a leadership role in charting a course for their institutions, and once charted, to hold to it.

2. The changes which occurred were planned. They didn't just happen.

3. A third observation somewhat related to the first, is that once clear goals and objectives were set, these were communicated to prospective new staff.

4. Each institution devoted a great deal of time and attention to recruiting persons who were willing to make a commitment to change, at Burlington, for example, the brochure sent to prospective staff carried the words

   "We at Burlington County College feel that the next few years will see drastic changes taking place in education which will call for flexible, dynamic and experimental approaches to instruction. We are committed to meeting these challenges. If you share with us in this concern, we invite your inquiry."

5. Each institution placed heavy emphasis on the development of a pre-service and in-service training program for faculty.

6. Each used external change agents to help provide the initial impetus:

   - Piedmont Tech used the National Laboratory for Higher Education

   - Hinds used INSGROUP

   - Burlington used a variety of consultants from Ralph Tyler and B. Lamar Johnson to faculty members from other institutions.

7. At each institution responsibility for assisting faculty in improving instruction was assigned to one or more persons. This was either an educational development officer or the dean.

8. Each institution has provided unusual support to the faculty. This includes such things as extensive learning resources equipment, facilities and personnel; released time for faculty; paid faculty fellowships for curriculum development; educational development officers to provide on-campus assistance to faculty; secretarial and printing support, etc.

9. Each institution has openly encouraged its faculty and staff to maintain contact at other institutions.

10. The last item which was shared by all three institutions, and in my opinion the most critical of all, is summarized by one word-"commitment."

Thank you.